

**REVISED DRAFT**

**CONCEPTUAL RIPARIAN REVEGETATION PLAN**

*for the*

**Santa Barbara Cancer Center**  
**Santa Barbara County, California**

*Prepared for:*  
**CANCER CENTER of SANTA BARBARA**  
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## **SUMMARY**

This conceptual restoration/ revegetation and monitoring plan outlines appropriate non-native plant species removal and revegetation measures to restore or enhance riparian resources along Mission Creek adjacent to the Cancer Center of Santa Barbara (CCSB) project site, located within the incorporation limits of the City of Santa Barbara, California.

Exotic plant species removal and revegetation of native riparian species within the Mission Creek corridor is being required by the City of Santa Barbara in conjunction with the proposed expansion of the Santa Barbara Cancer Center. The proposed Cancer Center expansion would not modify the creek (including bottom and banks), but would affect areas within the 25-foot setback from the creek top of bank, across a portion of the property. With respect to the 25-foot creek setback, the existing Cancer Center structure, which encroaches into the 25-foot setback, would be demolished; minor topographic modification would also occur in the 25-foot setback in order to establish proper drainage away from the Creek. In general, the creek and adjacent riparian environment would benefit from these two elements. However, existing local ordinance and resource agency policies generally require *any* disturbance within the 25-foot setback zone to be off-set with appropriate restoration.

While the project would not modify the creek channel, the opportunity does exist to enhance biological habitat values within the creek itself; such enhancement would increase the overall benefits of the restoration efforts addressing the 25-foot setback area. Accordingly, this conceptual plan designates as a riparian restoration/ revegetation area, the creek bank along with a 25-foot setback from the top of creek bank adjacent to the project areas where development or topographic modification is proposed to occur within the 25-foot setback. The project proposes to disturb areas within 25-feet from the top of bank for approximately 280 linear feet of Mission Creek; the disturbance area, and this restoration plan, have a boundary encompassing approximately 0.16 acre, with an additional 0.08 acre of creek bank proposed to be revegetated, for a total of 0.24 acre of restoration/ revegetation area proposed on site.

Within the creek channel, the restoration effort focuses heavily upon removal of non-native invasive species along the channel bank, and planting of species found in intact native habitat along Mission Creek, at a minimum density designed to discourage re-colonization by the non-native invasive species. For the 25-foot setback area, restoration will be achieved through debris and exotic/weedy vegetation removal, and installation of more dense plantings with local native riparian plant species, designed to achieve rapid establishment of a self-sustaining natural plant community. The restoration/ revegetation area will be planted with appropriate native species from local stock.

This conceptual restoration/ revegetation plan has been prepared in accordance with the guidelines recommended by the Army Corps of Engineers (ACOE) for restoration plan preparation. This conceptual plan presents information on project location and work descriptions, project impacts, planting and irrigation recommendations, and program goals. A comprehensive restoration plan, consistent with construction bid specification level of detail will be prepared for review and approval by the City, prior to the issuance of demolition or building permits for the project. Long-term maintenance requirements, monitoring methodology and revegetation success criteria would be included in the detailed plan.

## **1.0 INTRODUCTION**

This Conceptual Riparian Revegetation Plan was prepared by Dudek to facilitate review of the project by the City of Santa Barbara. The plan outlines restoration/ revegetation of riparian resources associated with Mission Creek, and is intended to fulfill the requirements of the City of Santa Barbara as enunciated in the Development Application Review Team (DART) Comment letters for the project (May 23, 2008 & May 20, 2009).

### **1.1 Project Description**

The primary purpose of this plan is to fulfill requirements for riparian habitat restoration on Mission Creek within the Cancer Center of Santa Barbara project site. The CCSB project will include the removal of existing buildings and the construction of a new cancer center. Potential impacts to Mission Creek throughout the duration of the CCSB project implementation will be avoided as outlined in the construction documents. Restoration through exotic species removal and revegetation with native species of 0.24 acre of riparian habitat will more than offset indirect impacts of the project upon Mission Creek, and should therefore satisfy City requirements for the CCSB project.

Recommended restoration of riparian habitat will occur at a 1:1 replacement ratio. Restoration/ revegetation acreage will be achieved through habitat enhancement, debris and exotic/weedy vegetation removal, and planting 0.24 acres of locally appropriate riparian habitat.

### **1.2 Project Location**

The subject property is located between West Pueblo Street and Junipero Street in the City of Santa Barbara, California (Figure 1). The study area lies within the Santa Barbara U.S.G.S. Quadrangle. The southern edge of the property abuts Mission Creek.

The site is within a broad, gently-sloping alluvial plain of primarily Quaternary deposits; within the project site (subject property) elevation increases south to north from 138 feet to 144 feet above mean sea level. Land uses within the Project study area and on adjacent land include medical, recreational, commercial, and urban residential housing.

### **1.3 Summary of Overall Project**

The proposed project would demolish the existing primary medical building on-site (540 West Pueblo Street) to create an integrated treatment facility. Approximately 2,904 gross square feet of existing medical and office space housed in several structures at the site would also be demolished to accommodate the treatment facility development. A

replacement structure of 56,087 square feet (three stories) would be developed as the main facility, resulting in a total net increase of 36,391 square feet (gross) of new medical office on the site. Grand total, the Master Plan would include 60,093 gross square feet of commercial space, including medical office, office, and related uses. The proposed project also involves the demolition of four existing structures on-site that are legally permitted as residences: two single family structures; one apartment building with two units; and, one apartment building with three units (seven total residential units existing). These would be partially replaced with two new duplex structures and a one unit addition to one existing residential structure, for a sub-total of 5 new/replacement residential units and a grand total of 6 residential units (new and retained).

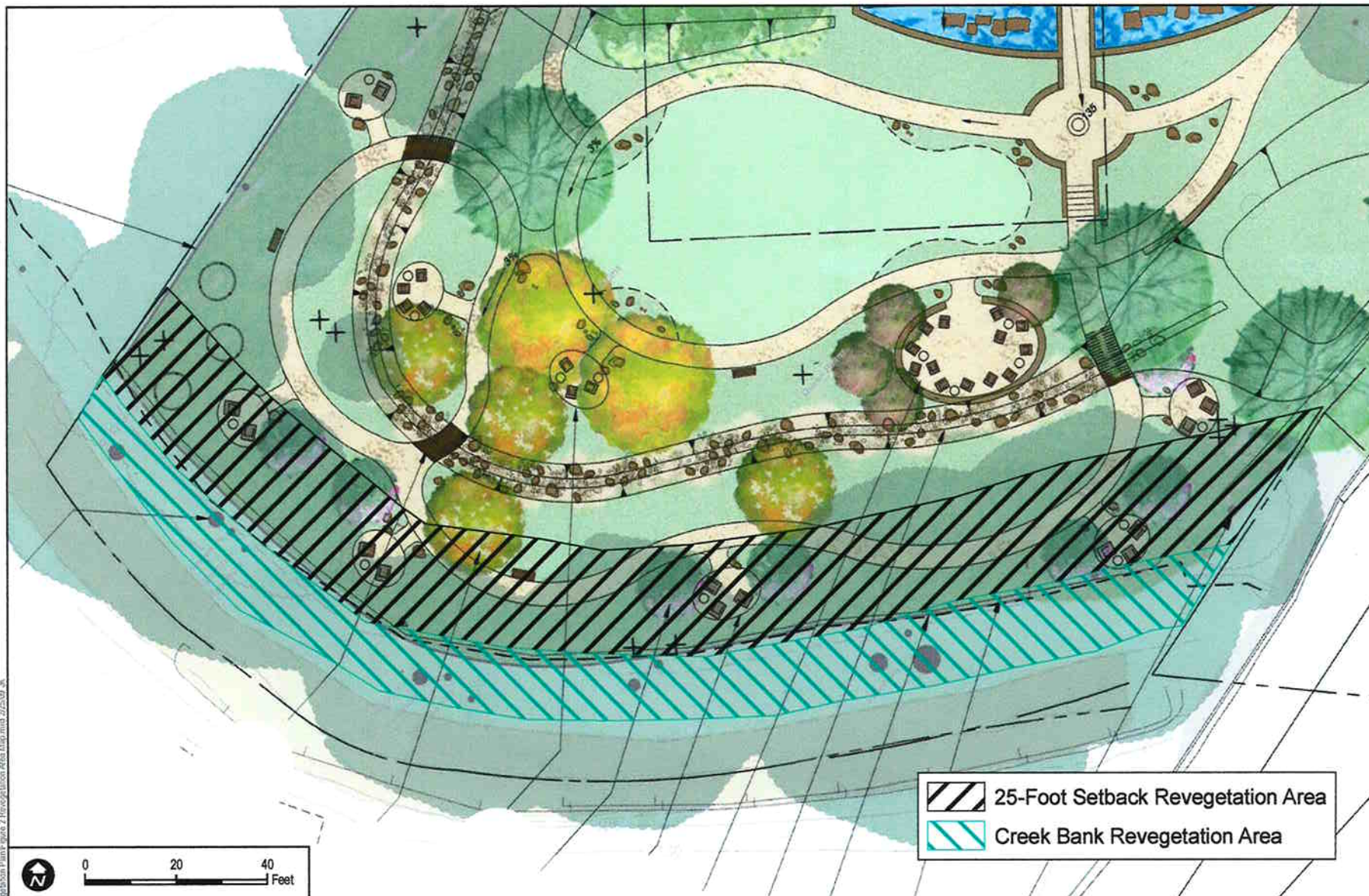
### **1.3.1 Restoration of Mission Creek**

Approximately 500 linear feet of Mission Creek abuts the project area. However, over approximately 220 feet of the project frontage along Mission Creek, absolutely no disturbance or modification is proposed to occur within 25 feet of the top of bank. Within the balance of the abutting creek frontage, approximately 280 feet, activities such as the removal of existing structures and site improvements are proposed to occur in the 25-foot setback area from top of bank. For the 280 linear feet of creek top within which some modification is proposed to occur, a 25-foot wide setback from the top of bank along Mission Creek will be designated as a restoration and revegetation area under the proposed project. No permanent CCSB project impacts will occur within the 25-foot creek setback area. The creek bank and the setback area will be cleared of non-native plant species and revegetated with locally appropriate native species and regularly maintained to ensure native establishment in the restoration area (Figure 2).









**DUDEK**

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SOURCE: Arcadia Studio 2008.

Conceptual Riparian Revegetation Plan for the Cancer Center of Santa Barbara

**FIGURE 2**  
**Proposed Restoration / Revegetation Area**

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### **I.3.2 Functions and Values of Existing Habitat**

The portion of Mission Creek running through the project site is an ephemeral stream. Stream flow from natural precipitation in the project site is negligible most of the year, except during and immediately following rainfall events. Stream flow increases rapidly in response to effective rainfall, then drops abruptly due to percolation losses in the alluvial channels. Extreme runoff events are generally produced by intense rainfall over a relatively short period of time within the watershed.

The creek bed within the study area bounded by Pueblo and Junipero Street (approximately 500-linear feet) consists of a flat channel ranging from sparsely vegetated open cobblestone bed to densely vegetated riparian habitat; the dense vegetation occurs outside and above the primary stream flow. A substantial portion of the creek bank abutting the subject property is armored (i.e., lined with concrete or sackrete). Additionally, the existing structures on the CCSB site are within the 25-foot setback area which limits native vegetation and available habitat. The portion of Mission Creek within the study area including the armored bank contains natives including western sycamore (*Platanus racemosa*) and willow (*Salix* sp.), intermixed with non-natives such as, ornamental trees including wattle (*Acacia* sp.), with an understory dominated by big-leaf periwinkle (*Vinca minor*), sorrel (*Oxalis* sp.), sweet fennel (*Foeniculum vulgare*), giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), castor bean (*Ricinus communis*) and non-native grasses (Dudek 2009). Figure 3 details existing conditions within the restoration/revegetation area.

The above-described non-native species represent the dominant invasive weed species within the project site, and pose the greatest threat to native habitats. Giant reed and tamarisk, for example, have been identified and categorized by the California Invasive Plant Council (Cal-IPC) as a 'high' status invasive species, which describes these species as having the potential for severe ecological impacts on physical processes, plant and animal communities, and vegetation structure (Cal-IPC 2006). These species are also capable of high rates of reproduction and dispersal. Due to the presence of invasive species and fragmentation of the riparian plant community, the current value of the riparian habitat adjacent to the project site is considered moderate.

In riparian vegetation communities, functions and values (e.g., groundwater recharge, sediment trapping, aquatic habitat, toxicant uptake, flood storage, and flood flow modification) will be increased by removing the targeted exotics and installing appropriate native riparian vegetation. The removal and control of exotic invasive vegetation within the creek reaches affected by the proposed development project would increase the amount of high value riparian habitat and reduce the potential for exotic plant dispersal in downstream areas. Additionally, native species establishment on site will increase soil stability and reduce erosive potential of the creek bank.





**Photo 1:** Looking northwest from Pueblo Street. Existing building and mature trees along the creek bank with bare ground and non-native species in the understory.



**Photo 2:** Several species of non-native grasses and vines have established along the existing landscape wall on the CCSB project area.



**Photo 3:** Existing native mature trees in the canopy layer with understory vegetation growth dominated by annual and perennial non-native species.



**Photo 4:** Storm drain outlets into Mission Creek to be removed along with non-native understory vegetation.



The goal of the conceptual restoration/ revegetation plan is to increase the functions and values of this reach of the Mission Creek through the removal and control of exotic vegetation species that presently occupy the project site. To the greatest extent practicable, these species will be eliminated from the project site and be replaced with regionally appropriate riparian vegetation. It is expected that the proposed project would provide habitat that would naturally sustain itself without any outside inputs and resist the re-colonization of problematic invasive vegetation.

### **1.3.3 Plant Communities/Habitats**

**Riparian Woodland** is a habitat type comprised of open-canopy stands of western sycamore, a medium to tall (40 to 100 feet tall) deciduous tree that sometimes reaches 11 feet in diameter, and coast live oak (*Quercus agrifolia*), an evergreen species reaching approximately 30 to 80 feet in height (Holland 1986). In the riparian woodland habitat of the project site, mature canopy trees of western sycamore and coast live oak are accompanied by an understory of willows and herbaceous species. The understory is often limited due to the dense canopy but the herb component is often continuous and is comprised primarily of non-native grasses including bromes (*Bromus diandrus*, *B. madritensis*, *B. hordeaceus*) and smilo grass (*Piptatherum miliaceum*), as well as small shrubs and vines including big-leaf periwinkle and giant reed. Within the project site, riparian woodland is the dominant vegetation type in the canopy layer.

**Open Channel** refers to the Mission Creek channel. The creek was largely unvegetated at the time of the survey. The channel is mainly comprised of 6 to 12 inch cobblestone with larger boulders distributed throughout the bed (Temple 2009).

### **1.3.4 Sensitive Plants**

No sensitive plant species were detected within the project site. Due to the lack of suitable habitat and disturbance within the project site, sensitive species are not expected to occur. Therefore, direct impacts to sensitive plants are not anticipated.

### **1.3.5 Sensitive Wildlife**

No sensitive wildlife species were detected during the survey. However, due to the presence of mature canopy trees onsite, nesting birds, including raptors, have the potential to occur within the project site. Breeding birds can be significantly affected by short-term construction-related noise and vegetation removal, which can result in the disruption of foraging, nesting, and reproductive activities. Therefore, impacts to nesting wildlife may occur if work occurs during the bird-nesting season. A pre-construction bird nesting survey should be completed, if it is anticipated that construction would commence during nesting bird season which begins on March 1 and ends on August 31.



### **1.3.6 Wildlife Corridors and Habitat Linkages**

Impacts to wildlife movement should not occur during the construction of the project or during implementation of the restoration plan. Removal of non-native vegetation along the bank of Mission Creek will take place in the herbaceous and shrub layer and should not affect local wildlife species. Restoration and revegetation proposed in the plan does not include alterations within Mission Creek or to the creek banks. Construction of the proposed project would also not preclude the use of onsite and adjacent habitat by wildlife or hinder its suitability as a corridor or linkage. The reach of Mission Creek adjacent to the project site has been determined not to provide suitable habitat for steelhead trout (Dudek 2009).

Upon project completion, habitat quality within the project area would be improved by the restoration and revegetation efforts. Perennial native species cover will be increased throughout the creek bank as well as the 25-foot setback area and non-native species will be removed throughout the area. Potential impacts to the restoration area will be temporary in nature, and it is not anticipated that project implementation would result in any direct, long-term impacts to the habitat linkage or movement corridor provided by the project site.

## **1.4 Project Responsibility**

### **1.4.1 Applicant Responsibilities**

This Conceptual Riparian Restoration/ Revegetation and Monitoring Plan is submitted on behalf of the Cancer Center of Santa Barbara (Applicant). The representative for the applicant is Brad Hess. The Applicant will be financially responsible for all negotiations and costs associated with the implementation, monitoring, maintenance, and protection of the restoration areas defined in this document and as required by the City.

The Proposed revegetation area within the project site will be made accessible to monitoring personnel of the City, ACOE and/or CDFG, as applicable, throughout the project review and permitting phase, as well as during the installation and follow-up monitoring period.

### **1.4.2 Restoration Contractor**

Non-native species removal and revegetation installation and associated labor shall be provided by a contractor possessing a valid California landscape contractor's license, who has previous experience with habitat revegetation in the region and who can demonstrate at least three successful similar revegetation projects in southern California.

After initial installation and completion of the 120-day plant establishment period, the applicant will have long-term maintenance services performed by an experienced landscape maintenance contractor that specializes in habitat restoration. Maintenance work shall be performed as indicated final restoration plan and per the project biologist's recommendations. The applicant may choose to hire a maintenance contractor that is separate from the installation contractor.

#### **I.4.3 Project Biologist**

A qualified project biologist or habitat restoration specialist (biologist) shall be retained for the purposes of monitoring the implementation and performing long-term biological monitoring. The Biologist may be an individual or a team of individuals and must have demonstrated experience in habitat restoration. The Biologist(s) must demonstrate an understanding of local plant community ecology, habitat restoration techniques and have expertise in native plant and weed identification.

The biologist shall help ensure that the applicant follows the guidelines of the final restoration/ revegetation plan, permits and associated detailed construction drawings, for the interpretation of such plans, for field monitoring of project installation, monitoring through the 120 day maintenance period, and biological monitoring over the established follow-up monitoring period.

Construction monitoring will occur throughout the construction period. Monitoring time may increase or decrease as required by field conditions and construction activities. During the construction, the field biologist will have the authority to stop work in situations where biological resources, not permitted to be impacted, are in imminent danger of impacts from construction activities. The project biologist will conduct monthly site visits during the 120-day post-installation plant establishment and warranty period.

#### **I.4.4 Project Documentation**

##### ***Construction Documentation***

Following acceptance of this conceptual restoration/revegetation plan, and approval of the development plan by the City of Santa Barbara, a *final restoration/revegetation plan*, along with detailed construction drawings and specifications will be prepared for construction purposes. Construction documents will conform with all aspects of this plan and to any subsequent permit conditions required by the resource agencies. These documents will be subject to the review and comment by the City. Construction documents will incorporate the most current site condition information available. The plan package will include a site plan, planting plans, irrigation plans, and associated legend and details. Revegetation construction plans will indicate container plant species, container sizes, planting locations and areas to be seeded.



## **2.0 SANTA BARBARA CANCER CENTER RESTORATION/ REVEGETATION PLAN**

### **2.1 Goals of the Riparian Restoration Program**

The goal of the restoration/ revegetation program is to improve the functions and values of the riparian habitat within the project area. The restoration/ revegetation program will increase the amount of high quality native habitat available along Mission Creek. Restoration will be accomplished through the enhancement of 0.24 acre of riparian habitat, following the removal of structures from the 25-foot setback area, with native herbaceous and shrub species through debris and exotic/weedy vegetation removal and establishment of locally appropriate riparian plant community species (*Tables 1 and 2*).

General goals that have been incorporated into the restoration plan to the greatest extent possible include:

- Create viable native habitat that will slow storm water runoff onsite, thereby minimizing erosion along the creek top and bank.
- Removal of invasive exotic vegetation.
- Minimize disturbance to adjacent preserved native habitats during implementation of the restoration/ revegetation plan.
- Prevent any impacts to sensitive wildlife species.
- Enhance species diversity.

#### **2.1.1 Type of Habitat to be Restored**

The restoration/ revegetation program will create or enhance the value of 0.24 acre of riparian woodland habitat. The program will create a natural buffer between Mission Creek and the CCSB facility, increasing the habitat available and the value of the habitat in the Mission Creek environment as well as enhancing the open space character of the site. Locally appropriate riparian species will be planted on site to supplement established native cover.

The habitat design developed for the CCSB site incorporates a stratified structure of species, including understory and herbaceous groundcover species, which is similar to the adjacent native habitats. The canopy layer on site has been previously established with native species including western sycamore. *Tables 1 and 2* show the intended species compositions, the intended spacings on center, the size for initial planting from container stock for each of the species proposed for revegetation.

**Table I  
Creek Bank Revegetation Area Plant Palette**

Botanical Name	Common Name	Container Size	Average Spacing	Number of Plants
<b>Canopy container plants</b>				
<i>Salix lasiolepis</i>	arroyo willow	1 gallon	12'	15
<i>Quercus agrifolia</i>	coast live oak	1 gallon	15'	15
<i>Platanus racemosa</i>	western sycamore	1 gallon	15'	15
<b>Understory container plants</b>				
<i>Lonicera subspicata</i>	southern honeysuckle	1 gallon	6'	20
<i>Ribes speciosum</i>	fuchsia-flowered gooseberry	1 gallon	6'	20
<i>Rubus ursinus</i>	California Blackberry	1 gallon	8'	15
<i>Artemisia douglasiana</i>	mugwort	1 gallon	8'	25
<i>Juncus patens</i>	common rush	1 gallon	10'	25
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	common snowberry	1 gallon	6'	30
<i>Leymus condensatus</i>	Ggant wild rye	1 gallon	12'	15
<b>Total Number of Container Plants Installed</b>				<b>195</b>



**Table 2  
25-Foot Setback Revegetation Area Plant Palette**

Botanical Name	Common Name	Container Size	Average Spacing	Number of Plants
<b>Understory container plants</b>				
<i>Heteromeles arbutifolia</i>	toyon	1 gallon	15'	15
<i>Prunus ilicifolia</i>	holly-leaf cherry	5 gallon	20'	11
<i>Lonicera subspicata</i>	southern honeysuckle	1 gallon	6'	35
<i>Rhamnus crocea</i>	redberry	1 gallon	6'	35
<i>Ribes speciosum</i>	fuchsia-flowered gooseberry	1 gallon	6'	40
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	flowering currant	1 gallon	6'	40
<i>Rubus ursinus</i>	California Blackberry	1 gallon	8'	30
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	common snowberry	1 gallon	6'	40
<i>Artemisia douglasiana</i>	mugwort	1 gallon	6'	45
<i>Juncus patens</i>	common rush	1 gallon	8'	40
<i>Mimulus auranticus</i>	bush monkeyflower	1 gallon	6'	40
<i>Leymus condensatus</i>	giant wild rye	1 gallon	6'	35
<i>Lotus scoparius</i>	deerweed	1 gallon	6'	40
<i>Salvia spathacea</i>	Hummingbird sage	1 gallon	4'	40
<i>Keckiella cordifolia</i>	climbing penstemon	1 gallon	6'	40
<b>Total Number of Plants Installed</b>				<b>526</b>

The proposed restoration/ revegetation plan is expected to result in a higher value and function than the existing habitat by removing non-native species from the site, increasing native species cover in the herbaceous and shrub layers, and expanding the current mosaic of adjacent native plant communities. Spacing and concentration of container plants to be installed on site allows natives to grow and fill-in the inter-space between each planting location. Each species will be spaced so that the greatest diversity will be achieved throughout the site by avoiding the grouping of several of the same species in a particular location. Restoration/ revegetation will establish a mosaic of native vegetation habitat best suited to Mission Creek.

### **2.1.2 Plant Materials and Installation Requirements**

Implementation of this restoration planting plan must be coordinated among the Applicant, Restoration Contractor, Project Biologist, and the nursery providing the plant materials under the contract growing agreement. The contracting nursery shall be given the maximum amount of lead time possible to allow for successful species propagation and preparation of plant materials for transport to the project site. Plant materials for the planting plan will include container stock of native wetland and upland plants as indicated in the plant palette provided in *Tables 1 and 2*.

A contract growing arrangement with a qualified licensed nursery shall be initiated prior to implementing the planting plan. The contracting nursery should be given the maximum possible lead time to complete special collections and prepare plant material for the project in order to assure availability and minimize cost. Few nurseries have experience dealing with native plants, especially those not used for ornamental purposes. An experienced native plant nursery such as Native Son in Arroyo Grande, or an approved equal should be contracted to supply the necessary container-grown plant material.

Standard planting procedures will be employed for installing most container stock. Holes shall be dug approximately twice the width and the same depth of the rootball. If dry soil conditions exist at the time of plant installation, holes will be filled with water and allowed to drain immediately prior to planting. Backfill soil will contain no rocks, clods or debris. Container plantings on the creek bank will be installed through small holes in the erosion control mats. Holes cut into the mats will be of the smallest size necessary to facilitate plant installation. Planting on the creek bank will be concentrated in the top one-third of the bank to avoid potential wash-out of installed plants during storm events. Tree species including willow and sycamore will be planted along the lower two-thirds of the creek bank and well as the upper one-third as these species are expected to establish in areas with higher flow velocities. Woody container plants shall be planted into the soil slightly deeper than standard, approximately two- to four-inches above the root collar of the plant. This additional planted depth for the above species will help insure sufficient rooting strength and provide additional protection against seasonal scour and/or uprooting due to high flow velocities during seasonal rains.



Temporary, above-ground irrigation is proposed to cover all of the restoration/ revegetation areas. Plant installation is recommended for late fall/early winter. This schedule is intended to minimize impacts to nesting birds, minimize erosion, protect downstream water quality, and provide an adequate lead time for plant propagation and establishment onsite.

### **2.1.3 Target Functions and Values of the Restoration Project**

The long-term goal of the restoration/ revegetation effort is to enhance the existing riparian habitat and create a self-sustaining system which is composed of native plant species. The restoration/ revegetation project is designed to ultimately create high quality habitats suitable for animal foraging, nesting and dispersal and be resistant to invasion of exotic species. Further, establishment of native species will help stabilize the surface soils and help improve water quality by reducing turbidity, top soil loss and provide native vegetation with nutrients which in turn will improve toxicant and sediment trapping.

### **2.1.4 Time Lapse**

The CCSB restoration/ revegetation site is expected to develop in successional stages even though the site will be augmented with container materials initially. The understory species are expected to become established first, followed by colonization of the canopy species. Based on previous restoration experiences with similar communities, however, Dudek expects that native plant compositions should be established well enough to survive under natural conditions and provided adequate care to resist the invasion of exotic species by the end of a 5-year grow in period. Appropriate monitoring will be included in the final restoration plan (to be prepared following project approvals).

## **3.0 IMPLEMENTATION OVERVIEW**

### **3.1 Rationale for Expecting Implementation Success**

Several site features within and adjacent to the CCSB restoration site support a high level of confidence in the ultimate success of the project. To revegetate the site, the restoration plan utilizes the same dominant plant species that are locally common within the watershed. The surrounding native habitat species compositions were used as a reference for the revegetation plant palettes proposed for the restoration site. Non-native and exotic species that have displaced desirable native species within the revegetation areas will be removed.

The intent is to assist in the creation of naturally diverse native habitats that will better resist exotic species and weed invasion. The site is and will continue to be maintained by

the Cancer Center of Santa Barbara as riparian habitat, limiting the disturbance factors outside the control of this restoration plan (e.g., human disturbance) and increasing the likelihood of success of the revegetation effort.

### **3.1.1 Required Activities During Project Implementation**

#### ***Construction Monitoring by Project Biologist***

The Project Biologist will make regular site observations of construction activities throughout the duration of construction. The Project Biologist will visit construction areas as necessary during vegetation removal, irrigation installation and plant installation. The Project Biologist will also review activities for conformance to this plan, and the requirements of contract plans and specifications. Each site observation visit will be documented in an observation report. Photo-documentation of site conditions will be conducted, as needed. The Project Biologist, via the construction manager, will have authority to stop work in areas where biological resources, not permitted to be impacted, are in imminent danger of damage from construction activities.

#### ***Onsite Construction Activity Restrictions***

During construction of the CCSB restoration/ revegetation project, the following activities will be prohibited onsite:

- Pets or domesticated animals are not allowed on the site.
- No machinery fluids will be added or changed on the revegetation site or near the creek channel; refueling of machinery will occur within designated areas and only over areas with a non-permeable membrane installed.
- Only machinery necessary to perform the approved installation will be allowed on site, and each machine shall be removed immediately after its task is complete.
- No dumping of debris or stockpiling of soil will occur in or near the creek channel on site.
- Construction access to the site will be limited to designated areas containing non-native, exotic, or invasive plants.
- All onsite features to be preserved (including existing native plants and mature trees) will be avoided at all times.

#### ***Site Clearing and Vegetation Salvage***

Prior to beginning construction, the project boundaries shall be surveyed, staked and limit of work fencing installed. All non-native, exotic, or invasive vegetation must be removed and disposed of offsite at an acceptable landfill facility. Other native species, as



identified by the Project Biologist, will be salvaged in place. All mature native trees to be protected in place within the restoration area will be flagged by the Project Biologist prior to construction initiation. All access routes are to be pre-approved by the Project Biologist to avoid unauthorized impacts.

### **Weed Eradication**

A grow and kill regime will be necessary following the installation of the irrigation system. The site shall be watered for 14 continuous days in order to germinate weed seed present in the soil. The contractor shall carefully schedule irrigation to prevent erosion. Following the 14 day period, the contractors shall spray all germinating weeds with the appropriate herbicide. Once all of the weeds have died, the contractor shall remove all of the dead weeds from the site prior to beginning planting work. Continuation of control activities will be at the discretion of the project biologist.

Weeds shall be controlled by hand pulling or herbicide application as directed by the project biologist. Ongoing weed control activities will occur within restoration/revegetation areas throughout the 120-day plant establishment period and the long-term maintenance period. All weed species will be absent from the entire revegetation area prior to revegetation installation activities. Weed eradication will consist of the complete removal of selected non-native vegetation (i.e. seed heads, stems, roots), and all debris and slash generated from removal activities will be disposed of offsite in a legally acceptable manner.

### **Construction Fencing**

Protection of the restoration/ revegetation site will be provided by temporary orange construction fencing installed along the project boundary to protect all environmentally sensitive areas. The fencing locations will be approved by the Project Biologist prior to installation, and shall be installed prior to commencement of the restoration/revegetation project. The fence will consist of orange snow fence attached to metal T-posts. All fencing materials must be a minimum of four feet high to prevent construction equipment and personnel from entering the environmentally sensitive areas. The protection fence will remain in-place until restoration activities are complete.

### **Project Signage**

Signage that identifies the project as a habitat restoration area will be placed at locations where public access is likely, and will include a phone number for additional information, directing questions to appropriate personnel. Signage will remain in-place until the end of the monitoring period.

## **Erosion Control**

Measures are designed into the mitigation project to provide long term erosion control protection because of the erosive soils and the existing erosion issues on the project site. The geomorphology report for the CCSB project site concluded that the creek bank is showing signs of minor erosion and that with a combination of revegetation and bio-degradable erosion control mats any small erosion incidents can be stabilized along the creek bank (Temple 2009). Cutting of a small hole in the erosion control mat will facilitate the installation of each container planting on the creek bank as detailed in Section 2.1.2.

Erosion control measures in the form of Best Management Practices (BMP's) will be utilized during construction as site conditions necessitate. BMP's including installation of silt fencing, fiber rolls, and sandbags at key locations adjacent to the restoration/revegetation site, as well as installation of erosion control measures/devices (e.g., geotextile fabric) throughout the remainder of the site during and following vegetation removal will be implemented as necessary. An erosion control plan for the site will be prepared to accompany the installation plan.

### **3.1.2 Temporary Irrigation System**

The primary goal of this mitigation project is to enhance and restore riparian habitat capable of maintaining and supporting itself. However, native container plants and will require irrigation to become established initially. A temporary drip irrigation system will be installed in the restoration/ revegetation area to support the container stock plantings until they can survive on their own based on seasonal rainfall and effective rooting depth.

All irrigation will be installed by the restoration contractor per the final plans and specifications, and consultation with the project biologist will be necessary to determine the timing of the cessation of the irrigation. Irrigation equipment will be removed once the system is decommissioned as directed by the project biologist. All irrigation onsite will consist of drip tubing staked at grade, with individual drip emitters at each installed container plant. Irrigation shall stop at the earliest possible date without risking significant loss of installed container plants. The irrigation system will be abandoned well before the end of the monitoring period, in order to provide evidence that the restoration/ revegetation areas are self-sustained.

### **3.1.3 As-Built Conditions**

The Biologist, in coordination with the Contractor, shall submit a report to the City, within six weeks of completion of the implementation of this project describing status of the restoration/ revegetation project. The report shall include as-built plans prepared

by the contractor that show the contours of the project areas and the locations of plantings, irrigation system components and other installation structures.

#### **4.0 REFERENCES**

Dudek. 2009. *Update and Revision to the Draft Biological Resources Summary and Proposed Mitigation Measures for New Construction on Cancer Center of Santa Barbara Property, Santa Barbara, California*. Prepared for the Cancer Center of Santa Barbara. May 2009.

Temple, S. 2009. *Updated Creek Stability Analysis Addressing the Cancer Center of Santa Barbara Redevelopment Project, Revised Site Plan*. Prepared for the Cancer Center of Santa Barbara. March 2009.